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TITLE: MANUFACTURE OF DUPLEX TUBE

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INVENTOR-INFORMATION:

NAME

YAMADA, TAKESHI

YAMASHITA, SEIJI

ARAKI, TOSHIMITSU

TAMURA, AKIRA

ASSIGNEE-INFORMATION:

NAME

KAWASAKI HEAVY IND LTD

COUNTRY

N/A

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INT-CL (IPC): B21C037/06;B22D019/16

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ABSTRACT:

PURPOSE: To obtain a duplex tube wherein an inner tube and an outer tube are surely and tightly fitted to each other by casting the inner tube centrifugally in the outer tube as a molding box, cooling the inner tube, reducing its diameter, then, heating the prescribed site of the outer tube annularly and moving the outer tube in an axial direction.

CONSTITUTION: After the molten metal 1' of stainless steel is cast from the end part of the outer tube 2 of carbon steel, etc., the outer tube 2 is rotated at a prescribed speed to form the inner tube 1 having a

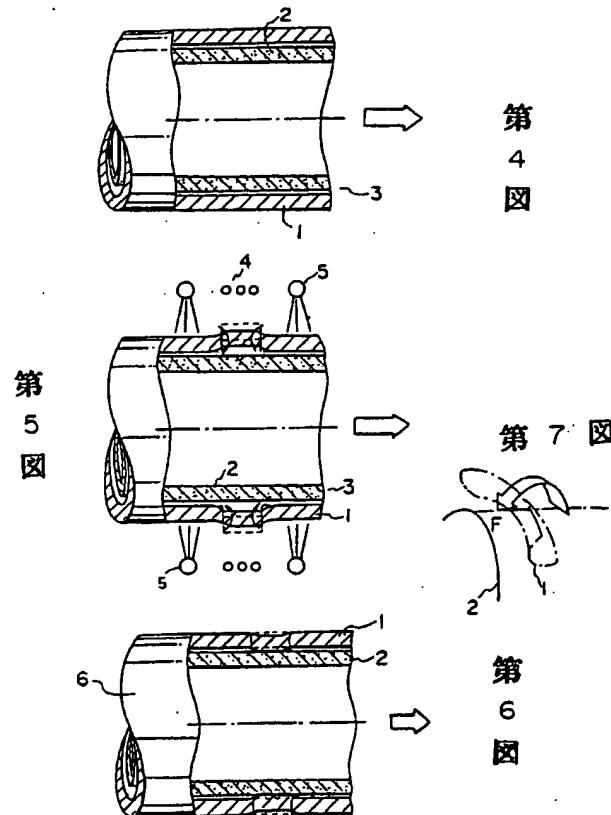
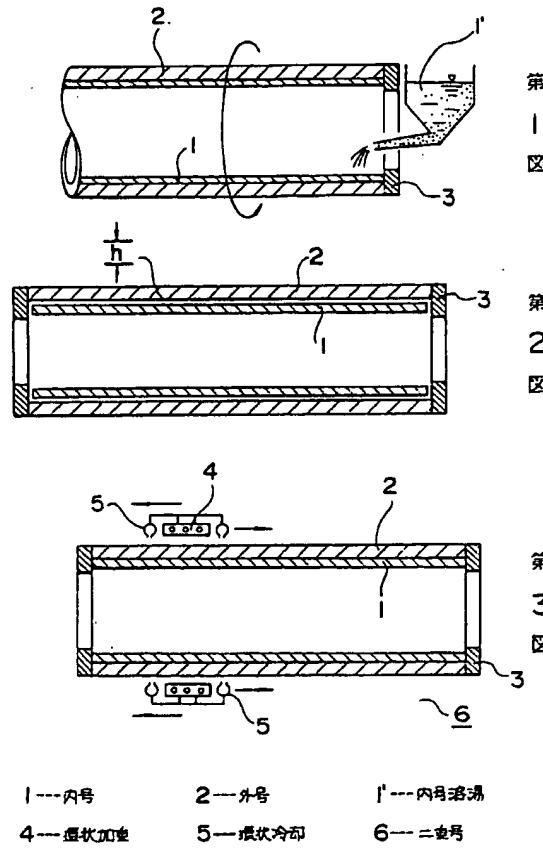
prescribed wall thickness
on the inner surface of the outer tube 2. Then, the inner
tube 1 is cooled by
natural cooling, etc., to form ringed fine clearances (h)
over the outer
surface of the inner tube 1 and the inner surface of the
outer tube 2. Then,
after the inner tube is cooled, a high frequency induction
heating device 4 and
shower 5, 5 by service water are set annularly. These are
integrated and moved
relatively in an axial direction one time at least and the
diameter of the
outer tube 2 is contracted and tightened to the total
length of the inner tube
1. In the meantime the outer tube 2 is contracted
uniformly in diameter, a
double layer tube is formed all over the length in a sure
and tightened state
to obtain a desired duplex tube 6.

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図、第4図以下は基本的原理態様の説明図であり、第4図は素管の部分断面側面図、第5図は環状縮径の部分断面側面図、第6図は二重管の部分断面図、第7図は外管の内管に対する押え曲げモーメントを介しての縮径緊結の模式斜視図である。

1…内管、 2…外管、 1'…内管溶接、
4…環状加熱装置、 5…環状冷却装置、
6…二重管

出願人 川崎重工業株式会社
代理人 富田幸春



手続補正書(自発)

昭和63年5月8日

特許庁長官 小川邦夫 殿

1. 事件の表示
特願昭62-330115号2. 発明の名称
二重管製造方法3. 補正をする者
事件との関係 特許出願人
住 所 兵庫県神戸市中央区東川崎町3丁目1番1号
名 称 (097)川崎重工業株式会社
代 表 者 大庭 浩4. 代理人 〒105
住 所 東京都港区西新橋1丁目19番3号
第2双葉ビル6階 電話(503)5584
氏 名 弁理士(7585)富田幸春

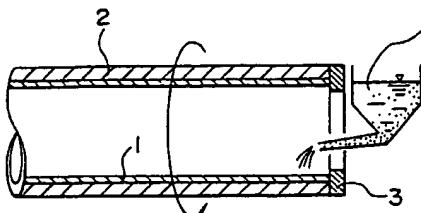
5. 補正命令の日付 自発

6. 補正により増加する発明の数 なし

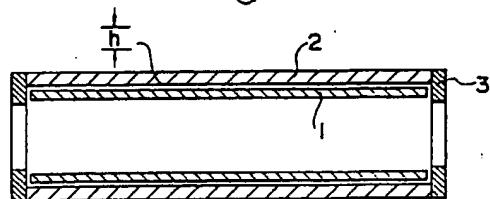
7. 補正の対象 図面

8. 補正の内容
図面に記載された符号の説明を別添の如く訂正。

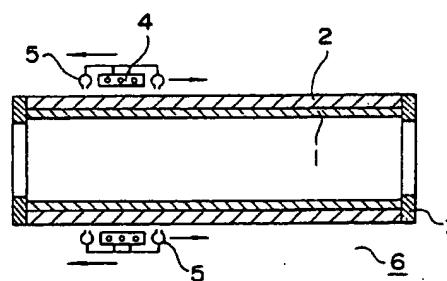
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第一図



第二図



第三図

1---内管 2---外管 3---内管溶接
4---直状加熱装置 5---直状冷却装置 6---二重管